

REMARKS/ARGUMENTS

The Office Action mailed September 8, 2004 has been reviewed and carefully considered. Claims 1-3, 5-7, and 9 have been amended and claims 10-15 are added. Claims 1-15 are pending in this application, with claims 1, 7, and 15 being the only independent claims. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Information Disclosure Statement

In the Office Action mailed September 8, 2004, the Examiner indicated that the referenced cited in the Search Report dated October 29, 2001 are considered but will not be printed because they are not on a PTO-1449 form. Attached hereto is a copy of the PTO-1449 which was filed with the present application. Applicant requests that the Examiner initial the form to indicate consideration of the references listed thereon.

Objections to the Drawings

The drawings are objected to as not showing every feature specified in the claims. Fig. 6 is added to show a flow diagram which includes the steps of the method recited in the method claims. Support for the new drawing is in claim 1 and in the specification. Regarding the apparatus claims 7-9, the network controller is disclosed in the specification as the WIO gatekeeper (see page 12, line 32). It is respectfully submitted that the means for performing the steps are the GSM Radio Access Gateway 3 and the WIO gatekeeper 4 themselves (see, e.g., Fig. 1). In view of the above amendments and remarks, the objection to the drawings should now be withdrawn.

Objections to the Specification

The Examiner requires under 37 CFR §1.72(b) that an Abstract on a separate sheet should be filed. Applicant's note that the present application is a U.S. National Stage application of

International Application No. PCT/EP00/03756, filed on April 19, 2000, a published pamphlet version of which was included in the filing papers of this national stage application. The abstract appears on the cover sheet of the published pamphlet version of the PCT application. As stated in MPEP §1893.03(e) (emphasis added):

When the international application is published as the pamphlet, the abstract is reproduced on the cover page of the publication, even though it appears on a separate sheet of the international application in accordance with PCT Rule 11.4(a). Thus the requirement of 37 C.F.R. §1.72(b) that the abstract "commence on a separate sheet" does not apply to a copy of the application (pamphlet) communicated to the designated Offices by the International Bureau under PCT Article 20. Accordingly, it is improper for the examiner of the U.S. national stage application to require the applicant to provide an abstract commencing on a separate sheet if the abstract does not appear on a separate sheet in the pamphlet. Unless the abstract is properly amended under the U.S. rules during national stage processing, the abstract that appears on the cover page of the pamphlet will be the abstract published by the USPTO under 35 U.S.C. §122(b) and in any U.S. patent issuing from the application.

Therefore, in the present national stage application, the filing of the original Abstract on a separate sheet is not necessary. Withdrawal of the objection is respectfully requested.

The title of the application is objected as not being descriptive. The title of the application is amended to be more descriptive of the invention to which the claims are directed. In view of the amendment to the title, the objection to the title should now be withdrawn.

Rejections under 35 U.S.C. §112, first paragraph

Claims 1-14 stand rejected under 35 U.S.C. §112, first paragraph, as failing to provide an adequate description of the claim limitations in the specification. The Examiner's rejection is traversed in view of the following remarks.

The preamble of claim 1 distinguishes between an internal cellular communications network and an external cellular communications network and recites that the internal network is packet network with a network controller (in line with claim 7 as filed). For example, Figure 2 and its associated description, shows cells of an internal communications network 100 (representing the WIO office which is described on page 16, lines 1 to 16) and also shows cells GSM1 and GSM2 which belong to an external cellular communications network (described on page 16, lines 18 to 20). Moreover, Figure 1 shows an internal (WIO) network comprising: a mobile station 1, a BTS 2, a network controller (gateway) 3, a gatekeeper 4 and a GSM gateway 8 connected to an external (GSM) 40 network.

Claim 1 then recites “allocating at least one cell of the internal cellular network as a border cell”, which is supported by Figure 2 which shows cell E being allocated as a border cell of the internal cellular network and this is furthermore supported on page 16, lines 15 to 16 and page 17 lines 6 to 10.

Claim 1 then recites “detecting the movement of said mobile station into said border cell”, which is described on page 17, lines 12 to 15 as beginning to generate the process of determining when a handover request is likely to be requested. Lines 15-17 on page 17 further recite that timing advance information conventional to GSM may be used to determine movement of the mobile station.

Page 18 lines 1 to 12 describes generating an advance hand-off by using a prediction algorithm which takes in to account one or more predetermined parameters associated with the mobile station so that an advance handover request is generated earlier than the actual handover request. This describes the feature of claim 1 which recites “generating an advance hand-off request in response to detecting said mobile station in the border cell and in accordance

with a prediction algorithm which uses a set of predetermined parameters associated with said mobile station for determining when an actual hand-off is likely to be required". Moreover, page 16 lines 19-22 clearly describes that the GSM radio access gateway 3 can implement the prediction algorithm. The GSM access gateway element 3 has been shown repeatedly throughout the drawings, for example see Figure 1a to 1d, and Figures 3 to 5.

Claim 1 then recites "setting up a communication channel in the external network in response to said advance hand-off request for use by said mobile station when an actual hand-off is made" which is supported on page 21, lines 24-31 . That is, it is described that since the external network has a advance notification of the handover, the required communication link necessary to execute the handover can be set up and in more detail this so-called "dummy" call can be set up (as described in the paragraph spanning pages 20 and 21).

The final feature of original claim 1 has been deleted. In view of the above remarks, it is quite clear that all of the features of amended claim 1 are clearly described in the specification so that one skilled in the art could make and use the invention.

Claims 7-9 stand rejected under 35 U.S.C. §112, first paragraph, as failing to enable one skilled in the art to make and use the invention. The Examiner states that the internal component of the internal cellular network are known only to the inventors. The Examiner's rejection is respectfully traversed in view of the following arguments.

The specification discloses that the WIO uses a standard protocol H.323 (page 2, lines 20-21; and page 3, lines 18-27). Furthermore, the WIO system is described in more detail on pages 2-7. The detailed description of the invention makes it clear that the WIO system is used in the present invention. Furthermore, a GSM gateway between the WIO system and the GSM network is also know to those skilled in the art. Furthermore, the specification states that the GSM

Radio Access Gateway 3 performs similar function to that of a base station controller and additionally provides conversion from GSM voice data to packet-based data suitable for the LAN (page 12, lines 24-30). It is respectfully submitted that those skilled in the art are enabled to build such a device or devices. The WIO gatekeeper 4 is a main controller and is responsible for H.323 protocol functions. It is respectfully submitted that given this information, one skilled in the art could make and use such a gatekeeper 4. The specification also discloses on page 17, line 19 to page 18, line 17, how the prediction algorithm may be implemented. In view of the above remarks, it is respectfully submitted that those skilled in the art of wireless communication could make and use the invention based on the disclosure of the specification. Accordingly, withdrawal of the rejection of claims 7-9 under 35 U.S.C. §112, first paragraph, should now be withdrawn.

Rejection of Claims in View of Prior Art

Claims 1-14 stand rejected under 35 U.S.C. §103 as unpatentable over U.S. Patent No. 6,519,235 (Kim) in view of U.S. Patent No. 6,507,567 (Willars).

Each of the independent claims 1, 7, and 15 recites "generating an advance hand-off request in response to detecting said mobile station in the border cell and in accordance with a prediction algorithm which uses a set of predetermined parameters associated with said mobile station for determining when an actual hand-off is likely to be required". The recitation clearly differentiates between (1) and advance handoff request, and (2) an actual handoff.

Neither Kim, Willars, nor the combined teachings thereof discloses, teaches or suggests the two stage handoff procedure. Kim relates to providing a more flexible packet data service in a mobile radio communication system. Kim achieves this with a plurality of packet data gateway nodes (PDGNS) which manage mobility of the mobile stations and routing functions of the packet data. Kim also teaching performing a handoff during use of the packet

data service. The handoff in Kim merely discloses using an address of a previous RNC when a certain mobile station moves into a region of a new RNC (see col. 3, lines 14-17). The two RNCs are part of the same communication system. Kim fails to disclose an internal communication system and an external communication system. Therefore, the handoff described in Kim is performed only when a mobile station has moved into a region controlled by a new RNC. Since the RNCs are in the same communication system, Kim also fails to teach or suggest a border cell defined as existing in an internal cellular network.

The Examiner states that Kim teaches generating an advance handoff request and refers to col. 3, lines 13-31. However this section of Kim describes how a handoff from one RNC to another is reported to the PDGNS. This fails to teach or suggest "generating an advance hand-off request in response to detecting said mobile station in the border cell and in accordance with a prediction algorithm which uses a set of predetermined parameters associated with said mobile station for determining when an actual hand-off is likely to be required", as expressly recited in independent claims 1, 7, and 15.

Willars fails to teach or suggest what Kim lacks. Willars relates to efficient handling of connection in a mobile communication network. Willars discloses that a communication system may have common channels and dedicated channels (see e.g., col. 8, lines 10-14). Similarly to Kim, Willars relates to handoffs between RNCs of one communication system. Accordingly, Willars also fails to teach or suggest a handoff between an internal communication system and an external communication system, as expressly recited in independent claims 1, 7, and 15. The Examiner states that col. 4, line 57 to col. 5, line 15 of Willars discloses allocating at least one cell of the internal cellular network as a border cell. However, this portion of Willars merely discloses that a mobile station may be arranged at a

border between two cells of the same network and be handed-off back and forth between the two of them. This portion of Willars has nothing to do with a border cell of an internal communication network which borders an external cellular network, as expressly recited in independent claims 1, 7, and 15.

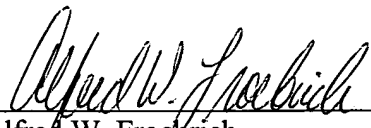
In view of the above amendments and remarks, it is respectfully submitted that independent claims 1, 7, and 15 are allowable over Kim in view of Willars.

Dependent claims 2-6, and 8-14, each being dependent on one of independent claims 1 and 7, are deemed allowable for at least the same reasons expressed above with respect to independent claims 1 and 7.

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

Respectfully submitted,

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Amendments to the Drawings:

The attached sheet of drawings includes a new Fig. 6. This sheet, which includes Fig. 6, is added to the original sheets.

Attachment: New Drawing Sheet